

I claim:

- 1     1.     Circuitry to provide remote slow shutter  
2     processing of a video signal from a video source,  
3     comprising:  
4         a memory, remote from the video source, to store a  
5     digital representation of a selected video signal; and  
6         signaling means to provide a write control signal  
7     that controls whether a portion of the selected video  
8     signal is stored in the memory.
- 1     2.     The circuitry as recited in claim 1 further  
2     comprising:  
3         a selector to select one of a plurality of video  
4     sources as the selected video source.
- 1     3.     The circuitry as recited in claim 1 wherein the  
2     write control signal is a don't-write signal.
- 1     4.     The circuitry as recited in claim 1 wherein the  
2     signaling means synchronizes the capture and refresh  
3     display of images from the selected video source when  
4     operating in a slow shutter mode.
- 1     5.     The circuitry as recited in claim 1 wherein the  
2     signaling means provides bidirectional control signals,  
3     including the write control signal, between the  
4     selected video source and the memory.
- 1     6.     The circuitry as recited in claim 5 wherein the  
2     bidirectional control signals further include an  
3     enable-slow-shutter signal to enable operation of a

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1        7. The circuitry as recited in claim 1 wherein the  
2        selected video source supplies a video signal, and the  
3        write control signal is separate from the video signal.

1        9. The circuitry as recited in claim 5 wherein at  
2        least one of the bidirectional control signals is an  
3        adjusted voltage level of the video signal.

1     10. The circuitry as recited in claim 5 wherein at  
2     least one of the bidirectional control signals is  
3     identified by its width in a vertical blanking interval  
4     of the video signal.

1 11. The circuitry as recited in claim 5 wherein at  
2 least one of the bidirectional control signals is a  
3 pulse applied to a portion of a vertical blanking  
4 interval of the video signal.

1 12. The circuitry as recited in claim 6 wherein the  
2 signaling means includes:  
3 an enable-detector circuit to detect the  
4 enable-slow-shutter signal; and  
5 a generate-don't-write-signal circuit to generate  
6 the don't-write signal.

1 13. The circuitry as recited in claim 6 wherein the  
2 signaling means includes:  
3 a generate-enable signal circuit to generate the  
4 enable-slow-shutter signal; and  
5 a detect-don't-write-signal circuit to detect the  
6 don't-write signal, wherein the memory maintains the  
7 stored signal in the memory when the  
8 detect-don't-write-signal circuit detects the  
9 don't-write signal.

1 14. The circuitry as recited in claim 2 wherein the  
2 selector includes an N x M switch.

1 15. The circuitry as recited in claim 2 wherein the  
2 selector includes a multiplexer.

1 16. The circuitry as recited in claim 1 further  
2 comprising signal processing means for adding a  
3 predetermined number of fields of the video signal in  
4 the memory.

1 17. The circuitry as recited in claim 1 wherein the  
2 memory stores a predetermined number of fields to  
3 provide an image history track.

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1 18. The circuitry as recited in claim 17 further  
2 comprising signal processing means to analyze motion  
3 between the predetermined number of fields and to  
4 indicate the motion.

1 19. The circuitry as recited in claim 1 further  
2 comprising:  
3 a switch to provide an enable slow shutter signal  
4 to enable remote digital slow speed shutter video  
5 processing in the video source.

1 20. The circuitry as recited in claim 1 further  
2 comprising:  
3 an encoder to provide an encoded video output  
4 signal from the digital representation of the selected  
5 video signal in said memory, wherein a format of the  
6 selected video signal is different from a format of the  
7 encoded video output signal.

1 21. A camera comprising:  
2 an image sensor to sense image information; and  
3 a generate-write-control-signal circuit to provide  
4 a write control signal when digital slow speed shutter  
5 is enabled in the camera.

1 22. The camera as recited in claim 21 wherein write  
2 control signal is a don't-write signal.

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1     28. The camera as recited in claim 21 wherein the  
2     generate-write-control-signal circuit superimposes the  
3     don't-write signal in a back-portion of the vertical  
4     blanking interval of the video signal.

1 29. The camera as recited in claim 21 wherein the  
2 generate-write-control-signal circuit superimposes the  
3 don't-write signal as a pulse in a vertical blanking  
4 interval of the video signal.

1 30. The camera as recited in claim 22 further  
2 comprising video circuitry to generate a video signal  
3 from the image information, wherein the detect-enable  
4 signal circuit receives the enable-slow-shutter signal  
5 on separate leads from the video signal.

1 31. The camera as recited in claim 21 further  
2 comprising a switch to supply an external lock signal  
3 to the image sensor, wherein the image sensor acquires  
4 an image synchronized to the an external lock signal.

1 32. A digital video memory comprising:  
2 a memory to store digital image data representing  
3 a selected video signal from a plurality of video  
4 signals;  
5 write control circuitry to detect a write control  
6 signal when digital slow speed shutter operation is  
7 enabled, wherein the memory is updated based on the  
8 write control signal.

1 33. The digital video memory of claim 32 wherein the  
2 write control signal is a don't-write signal, and the  
3 digital image data stored in the memory is maintained  
4 when the write control signal is detected.

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1 34. The digital video memory of claim 32 further  
2 comprising:  
3 enable circuitry to provide an enable-slow-shutter  
4 signal to enable digital slow speed shutter operation.

1 35. The digital video memory of claim 34 wherein the  
2 enable-slow-shutter signal is superimposed on the  
3 selected video signal.

1 36. The digital video memory of claim 34 wherein the  
2 enable-slow-shutter signal is a pulse of at least a  
3 predetermined duration in a vertical blanking interval  
4 of the video signal.

1 37. The digital video memory of claim 32 wherein the  
2 write control signal is superimposed on the selected  
3 video signal.

1 38. The digital video memory of claim 37 wherein the  
2 write control signal is a pulse having at least a  
3 predetermined threshold voltage in a vertical blanking  
4 interval of the video signal.

1 39. The digital video memory of claim 32 wherein the  
2 write control signal is provided separate from the  
3 selected video signal.

1 40. The digital video memory of claim 32 further  
2 comprising:  
3 an encoder to provide an encoded video output  
4 signal from the digital image data in said memory,  
5 wherein a format of the selected video signal is

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1        41. The digital video memory of claim 40 wherein the  
2        format of the encoded video output signal is  
3        progressive scan RGB format.

43. The video selector of claim 42 wherein the digital video memory further comprises:

enable circuitry to provide an enable-slow-shutter signal to enable digital slow speed shutter operation.

1     45. The video selector of claim 42 the write control  
2     signal is superimposed on the selected video signal.



1        52. The method as recited in claim 51 further  
2        comprising:  
3                generating an enable-slow-shutter signal remote  
4        from the at least one video source, wherein the write

5 control signal is provided in response to the  
6 enable-slow-shutter signal.

1 53. The method as recited in claim 51 wherein the  
2 write control signal is a don't-write signal.

1 54. The method as recited in claim 51 wherein the  
2 remote memory is located at a different location from  
3 the at least one video source.

1 55. The method as recited in claim 51 wherein the  
2 write control signal is superimposed on a video signal.

1 56. The method as recited in claim 36 wherein the  
2 write control signal is provided separate from a video  
3 signal.

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